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10/630,494	07/30/2003	Saurabh Kumar	120442-169968	9683

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17th June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-11,13-31 and 33-35* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-11,13-31 and 33-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17th

June 2010 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

Claims **1**-5, 7-**9**, **11**, **13**-16, **17**, **19**, **20**-22, 24-27, **28**-31 and **33**-35 are rejected

under 35 U.S.C. 102(e) as being anticipated by Rana et al (US 7760737 B2, Rana).

Claim **1**: Rana teaches a method, comprising:

receiving, by a network device, a packet fragment of a packet (col. 4 lines 10-13:

PDU assembler extracts fragments);

determining, by said network device, if said received packet fragment is a head

fragment or a non-head fragment of said packet (col. 4 lines 10-13: header); and

if the received packet fragment is determined to be the head fragment of said

packet (col. 4 lines 17-19: new fragment; col. 9 lines 40-59: [the new fragment] is a first

(head) fragment (fragment 0)):

generating, by said network device, a session associated with the head fragment

(col. 4 lines 17-19: new fragment id assigned; col. 6 lines 62-65: session id);

processing, by said network device, the head fragment to determine a destination

address for said head fragment (col. 6 lines 34-40: extract destination address), said

generated session having a period of time to store forwarding information (col. 17-20:

time stamp; fig. 1: fragment CAM 32), including said determined destination address

(fig. 3A: DIP is destination address), for said packet or a fragment thereof (see above);

and

applying, by said network device, said destination address which is obtained from

said generated session to at least one non-head fragment of said packet (col. 6 lines

37-45: assign unique id (destination address, DIP) to fragments or stream).

Claim **9**: Rana teaches a method, comprising:

if a head fragment of a packet is received (col. 4 lines 17-19: new fragment; col.

9 lines 40-59: [the new fragment] is a first (head) fragment (fragment 0)), generated a

session associated with the received head fragment of the packet (col. 4 lines 17-19:

new fragment id assigned; col. 6 lines 62-65: session id);

determining a destination address for the received head fragment of the packet

(col. 6 lines 34-40: extract destination address), said generated session having a period

of time to store forwarding information (col. 7 lines 17-20: time stamp; fig. 1: fragment

CAM 32), including said determined destination address (fig. 3A: DIP is destination

address), for said packet or a fragment thereof (see above); and

applying, by said network device, said destination address which is obtained from

said generated session to at least one non-head fragment of said packet (col. 6 lines

37-45: assign unique id (destination address, DIP) to fragments or stream).

Claim **11**: Rana teaches a method, comprising:

if a head fragment of a packet is received (col. 4 lines 17-19: new fragment; col.

9 lines 40-59: [the new fragment] is a first (head) fragment (fragment 0)), generated a

session associated with the received head fragment of the packet (col. 4 lines 17-19:

new fragment id assigned; col. 6 lines 62-65: session id), said generated session having

a period of time to store forwarding information (col. 7 lines 17-20: time stamp; fig. 1:

fragment CAM 32), including said determined destination address (fig. 3A: DIP is

destination address), for said packet or a fragment thereof (see above); and

applying the forwarding information obtained from the generated session,

including a destination address (col. 6 lines 37-45: assign unique id (destination address,

DIP) to fragments or stream), to any corresponding non-head fragment of said packet

(see above), said applying including overwriting a destination address field of said any

corresponding non-head fragment with said obtained destination address (col. 6 lines

37-45: assign unique id (destination address, DIP) to fragments or stream).

Claim **13**: Rana teaches an article of manufacture (fig. 1), comprising:

a non-transitory computer-readable medium having instructions stored thereon

that are executable by a processor to handle fragments (fig. 1: queue engine 10), by:

determining if a fragment of a packet is either a head fragment or a non-head

fragment (col. 4 lines 16-19: new or existing fragment; col. 9 lines 40-56: new fragment

is first (head) fragment (fragment 0));

if the received packet fragment is determined to be the head fragment of said

packet (col. 4 lines 17-19: new fragment; col. 9 lines 40-59: [the new fragment] is a first

(head) fragment (fragment 0)):

generating a session associated with the head fragment (col. 4 lines 17-19: new

fragment id assigned; col. 6 lines 62-65: session id);

processing the head fragment to determine a destination address for said head

fragment (col. 6 lines 34-40: extract destination address), said generated session

having a period of time to store forwarding information (col. 7 lines 17-20: time stamp;

fig. 1: fragment CAM 32), including said determined destination address (fig. 3A: DIP is

destination address), for said packet or fragment thereof (see above);

applying the destination address which is obtained from said generated session

to any corresponding non-head fragment of said packet (col. 6 lines 37-45: assign

unique id (destination address, DIP) to fragment or stream).

Claim **17**: Rana teaches a system (fig. 1), comprising:

a means for determining if a fragment of a packet is either a head fragment or a

non-head fragment (col. 4 lines 16-19: new or existing fragment; col. 9 lines 40-56: new

fragment is first (head) fragment (fragment 0));

a means for processing the fragment if it is determined to be a head fragment to

determine a destination address for said head fragment (col. 4 lines 17-19: new

fragment; col. 9 lines 40-59: [the new fragment] is a first (head) fragment (fragment 0)) and

for generating a session associated with the head fragment (col. 4 lines 17-19: new

fragment id assigned; col. 6 lines 62-65: session id), said generated session having a

period of time to store forwarding information (col. 7 lines 17-20: time stamp; fig. 1:

fragment CAM 32), including said determined destination address (fig. 3A: DIP is

destination address), for said packet or a fragment thereof (see above); and

a means for applying the destination address which is obtained from said

generated session to any corresponding non-head fragment of said packet (col. 6 lines

37-45: assign unique id (destination address, DIP) to fragment or stream).

Claim **20**: Rana teaches a system (fig. 1), comprising:

an entry point to receive packet fragments of a packet (fig. 1: input 12; col. 4 lines

10-13: PDU assembler extracts fragments);

a network device coupled to the entry point to determine if a packet fragment

received at the entry point is a head fragment of said packet (col. 4 lines 17-19: new

fragment; col. 9 lines 40-59: [the new fragment] is a first (head) fragment (fragment 0)), and

to generate a session associated with the head fragment if the received packet

fragment is determined to be the head fragment (col. 4 lines 17-19: new fragment id

assigned; col. 6 lines 62-65: session id), said generated session having a period of time

to store forwarding information (col. 7 lines 17-20: time stamp; fig. 1: fragment CAM 32),

including a destination address (fig. 3A: DIP is destination address), for said packet or a

fragment thereof (see above);

a storage unit coupled to network device to store non-head fragments of said

packet that are received at the entry point (fig. 3D); and

an exit point coupled to the network device (fig. 1: output 42), said non-head

fragments stored at the storage unit are updated at the exit point with said destination

address which is obtained from said generated session (col. 9 lines 25-38).

Claim **28**: Rana teaches an apparatus to handle packet fragments (fig. 1), the

apparatus comprising:

a network device to receive a head fragment of a packet (fig. 1: input 12), to

process the received head fragment to determine a destination address for said head

fragment and to generate a session associated with the received head fragment (col. 4

lines 17-19: new fragment id assigned; col. 6 lines 62-65: session id), said generated

session having a period of time to store forwarding information (col. 7 lines 17-20: time

stamp; fig. 1: fragment CAM 32), including the determined destination address (fig. 3A:

DIP is destination address), for said packet or a fragment thereof (see above), and to

apply the destination address which is obtained from said generated session to any

corresponding non-head fragment of said packet (col. 6 lines 37-45: assign unique id

(destination address, DIP) to fragment or stream).

Claim **31**: Rana teaches an apparatus to handle packet fragments (fig. 1), the

apparatus comprising:

a switch to receive a head fragment of a packet (fig. 1), to process the received

head fragment to determine a destination address for said head fragment (col. 6 lines

34-40: extract destination address), to generate a session associated with the received

head fragment (col. 4 lines 17-19: new fragment id assigned; col. 6 lines 62-65: session

id), said generated session having a period of time to store forwarding information (col.

7 lines 17-20: time stamp; fig. 1: fragment CAM 32), including the determined

destination address (fig. 3A: DIP is destination address), for said packet or a fragment

thereof (see above), and to apply the destination address which is obtained from said

generated session to any corresponding non-head fragment of said packet (col. 6 lines

37-45: assign unique id (destination address, DIP) to fragments or stream),

said switch performs said apply by an overwrite of a destination address field of

said any corresponding non-head fragment with said obtained destination address (col.

6 lines 37-45: assign unique id (destination address, DIP) to fragments or stream).

Claim 2: Rana teaches the method of claim 1 wherein said processing the head

fragment includes generating, by said network device, a session pointer data structure

associated with said generated session and having the destination address (col. 6 lines

56-67: head_ptr… session; fig. 3A: DIP),

said applying said destination address to said at least one non-head fragment

includes applying, by said network device, the destination address located from said

session pointer data structure to said at least one non-head fragment (col. 6 lines 37-45:

assign unique id (destination address, DIP) to fragment fields).

Claim 3: Rana teaches said receiving said packet fragment includes receiving, by

said network device, a fragment of an IP fragmented packet (col. 4 lines 47-55: IP

reordering fragments).

Claim 4: Rana teaches the head fragment includes all header information from

said packet (col. 3 lines 49-53), and the non-head fragments include packet data from

said packet (col. 4 lines 47-48: PDU (datagram) fragments).

Claim 5: Rana teaches wherein both the head and non-head fragments contain

duplicative header information from said packet (col. 4 lines 47-55), and: said

processing the head fragment includes processing, by said network device, one of the

fragments having the header information as the head fragment (col. 4 lines 17-19: new

fragment; col. 9 lines 40-59: [the new fragment] is a first (head) fragment (fragment 0));

said applying includes designating, by said network device, said destination address

which is obtained from said generated session to other ones of the fragments having

the header information as non-head fragments (col. 6 lines 37-45: assign unique id

(destination address, DIP) to fragments or stream).

Claims 7, 16, 30 and 35: Rana teaches said applying includes adding to the at

least one non-head fragment, by said network device, a routing tag that includes said

destination address obtained from said generated session (col. 6 lines 36-44:

destination address into fragment fields), said destination address located at a receiver

end outside of an exit point of said network device (fig. 1: outside of output 42).

Claims 8 and 31: Rana teaches said processing the head fragment includes

processing, by said network device, the head fragment according to at least one of

Layer 4 through Layer 7 criteria (fig. 3C shows data structure / pointers / link lists which are layer 4 or above software operations).

Claim 14: Rana teaches forwarding the non-head fragments having obtained destination address applied thereto (col. 5 lines 19-25: As with fragment reassembly unit 28, IP reordering unit 34 is able to modify the link lists in link list memory 24 using link list memory controller 22 in order to place PDUs in the correct order. Once the next expected PDU is received and placed into the proper place in sequence it is sent to link list control unit 40 for forwarding to output 42).

Claims 15, 19 and 34: Rana teaches said processor stores a plurality of corresponding non-head fragments if the session has not been generated (col. 7 lines 46-50: fragment added to memory), and said applying the determined destination address to any corresponding non-head fragment of said packet includes subsequently applying the obtained destination address to said stored plurality of non-head fragments after the session has been generated (col. 6 lines 36-44: destination address into (non-head) fragment fields).

Claims 21 and 29: Rana teaches the network device includes a switch to receive said fragments which were fragmented from said packet by a router (col. 2 lines 4-6: fragmentation can occur when a data packet is transmitted through a device such as a router or switch).

Claim 22: Rana teaches the entry and exit points are included as parts of at least one software based function (fig. 1: input 12 and output 42 can be software controlled).

Claim 24: Rana teaches the network device processes the head fragment to determine said destination address (col. 5 lines 11-15: header extraction).

Claim 25: Rana teaches at least another network device coupled to the exit point

to perform said processing of the head fragment (fig. 1: IP reordering unit 34 (indirectly

coupled to the output 42); col. 5 lines 11-13 and 23-25).

Claim 26: Rana teaches another storage unit, coupled to the exit point, to store

the destination address (fig. 1: linked list control unit 40).

Claim 27: Rana teaches a software program to operate in conjunction with the

network device to handle the non-head and head fragments (fig. 3C shows data

structure / pointers / link lists which are layer 4 or above software operations).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Rana et al (US 7760737 B2, Rana) in view of Basso et al (US 7065086 B2,

Basso).

Claims 10 and 18: Rana teaches forwarding any corresponding non-head

fragment having obtained destination address applied thereto (col. 5 lines 19-25: As with

fragment reassembly unit 28, IP reordering unit 34 is able to modify the link lists in link list memory 24

using link list memory controller 22 in order to place PDUs in the correct order. Once the next expected

PDU is received and placed into the proper place in sequence it is sent to link list control unit 40 for

forwarding to output 42). Rana does not very explicitly mention "forwarding said head

fragment to said determined destination address." Basso teaches *function* of forwarding

said head fragment to said determined destination address (col. 10 lines 1-5: first fragment

contains relevant content-based info – destination address – is forwarded to its destination). It

would have been obvious to one of ordinary skill in the art when the invention was

created to implement the steps of Basso to the fragment forwarding system of Rana to

avoid time-and-resource consuming storing of fragments as "fast forwarding" is applied

(Basso: col. 5 line 65- col. 6 line 9).

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new

ground(s) of rejection. See Rana and Basso above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

1. **Horton** et al, US 7349437 B2: a receiver receives a bandwidth request from a
cable modem to transfer data packets; the bandwidth less than the requested
bandwidth, is allocated to the modem; a portion of data packet which includes fragment
header with sequence number, is received in the allocated bandwidth; the data packet
is reassembled by concatenating the received portion of data packet with other portions.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Xavier Wong whose telephone number is 571.270.1780.

The examiner can normally be reached on Monday through Friday 8:30 am - 6:00 pm

(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema Rao can be reached on 571.272.3174. The fax phone number for

the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866.217.9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571.272.1000.

/Xavier Szewai Wong/
Patent Examiner AU 2462
5th February 2011